

**REMARKS**

Claims 1-6 are all the claims pending in the application. Claims 1, 5, and 6 are independent claims.

**Claim Rejection Under 35 U.S.C. § 103**

Claims 1-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Gorday et al. (US 6,665,521) in view of O'Sullivan (US RE 39,427).

**Claim 1**

Applicant has amended claim 1 to recite that the mobile communication apparatus is mounted on a subject mobile unit for effecting wireless communication between *a plurality of mobile units including said subject mobile unit, another mobile unit, and a third mobile unit* and that the mobile communication apparatus includes a reception means for receiving information transmitted *from the other mobile unit*; and transmission means for hopping the received information *to the third mobile unit*. This amendment is supported in the original specification at least by the discussion at page 11, lines 11-27. In addition, Applicant has amended claim 1 to recite that the surrounding environment detection means detects *whether or not there are communication obstacles* shielding wireless signals in the surrounding environment. This amendment is supported in the original specification at least by the discussion at page 13, lines 9-19.

Applicant respectfully requests the Examiner to withdraw the rejection of independent claim 1 at least because there is no combination of Gorday and O'Sullivan that would reasonably meet all of the claim's recitations. That is, there is no combination of Gorday and O'Sullivan

that would reasonably meet the claimed mobile communication apparatus, which is mounted on a subject mobile unit and includes a reception means for receiving information transmitted *from another mobile unit*; a transmission means for hopping the received information *to a third mobile unit*; and surrounding environment detection means that detects *whether or not there are communication obstacles shielding wireless signals in the surrounding environment*.

The apparatus of claim 1 is directed to a mobile communication apparatus mounted on a subject mobile unit that hops information received from another mobile unit to a third mobile unit. By the apparatus of claim 1, the quality of a communication state between mobile devices is determined *without actually effecting transmission*. Based on this determination, the apparatus determines whether or not to actually effect the transmission before the transmission is effected, avoiding unnecessary hopping.<sup>1</sup> In contrast, the communication techniques in both Gorday and O'Sullivan effect a communication first and then, based on an error resulting therefrom, the quality of the communication is determined.

*Gorday*

Gorday discloses a system including a cooperative diversity network 20 of potential “partners.” For a wireless device 29 within the cooperative network, “partners” are wireless devices that are within range of a short wave, secondary wireless transmission protocol of the device 29, as shown in FIG. 2.

Each member 22, 24, 26, 28, 29 of the cooperative diversity network 20 reports the link quality of their first protocol transmission (i.e., good or poor communication state) and

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<sup>1</sup> See original specification at page 2, lines 4-6.

availability (step 304). Then, a group of the potential “partners” are selected based on criteria, including availability, transceiver status, processing capacity, memory capacity, first protocol link quality, and/or second protocol link quality (step 306). Each member then communicates access information to enable diversity reception (step 308). Thereafter, one or more members of the diversity network can receive and transmit primary protocol messages as a collaborative unit with the device 29 (step 312).<sup>2</sup>

Additionally, one or more members of the diversity network can transmit or receive primary protocol messages for the device 29 (and without the device 29) if the device 29 has poor signal conditions.<sup>3</sup>

The Examiner asserts that Gorday discloses a surrounding environment detection means for detecting objects that shield wireless signals. Specifically, the Examiner has again cited to several portions of Gorday (Figs. 1–4; col. 3, lines 9–28; col. 3, line 67 to col. 4, line 10; col. 5, lines 1–7, 16–26). However, Gorday merely discloses a plurality of wireless units which report their respective communication states to/from each other, based on which the communication states of the respective wireless units are detected. Then, information is transmitted to a targeted member.

Gorday does not disclose anything regarding actually determining *whether or not there are communication obstacles shielding wireless signals in the surrounding environment*. Instead, Gorday merely generally discloses some examples of situations in which transmission

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<sup>2</sup> See Gorday at FIG. 3 & 3:5–28.

<sup>3</sup> See Gorday at 4:46–57.

quality could be improved, such as the basement of an office building.<sup>4</sup> However, there is no disclosure at all regarding actually determining whether *or not there are communication* obstacles in the surrounding environment. As discussed in the previous amendment, these communications obstacles are tangible objects such as buildings or walls, etc.<sup>5</sup> According to the invention of claim 1, the communication obstacles are actually detected; and based on this detection, the communication state (quality) is decided. That is, the technique of the claimed invention determines a good or bad communication state indirectly based on a presence or absence of communication obstacles, rather than by actually carrying out some signal or information communication between terminals, such as is done in Gorday.

Thus, Gorday does not disclose the recited feature of a surrounding environment detection means that detects whether or not there are communication obstacles shielding wireless signals in the surrounding environment.

*O'Sullivan*

Moreover, O'Sullivan does not make up for these deficiencies in Gorday. In O'Sullivan, data are transmitted between cellular phones via a relay antenna. Even assuming *arguendo* that the cellular phone of O'Sullivan corresponds to a "mobile unit," O'Sullivan does not disclose hopping of information received *from another cellular phone to a third cellular phone* hopping. As such O'Sullivan clearly does not disclose the recited transmission means.

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<sup>4</sup> See Gorday at 5:8-23.

<sup>5</sup> See for example, original specification at page 13, lines 9-24.

Moreover, with respect to the recited feature of the “surrounding environment detection means,” the portion of O’Sullivan cited by the examiner (i.e., column 2, lines 18-36) merely states:

*...[T]he transmitted signal may hit a building or other obstacle and bounce erratically or fade as the vehicle is shielded from the cell antenna. ...Errors occur so frequently in a cellular environment that the number of repeat requests become large and data transmission efficiency is reduced below an acceptable amount.*

However, O’Sullivan does not disclose or teach the recited surrounding environment detection means that detects “whether or not there are the communication obstacles shielding wireless signals *in the surrounding environment*.” Instead, O’Sullivan merely discloses that these obstacles exist.

Further, at the further portion cited by the Examiner (i.e., column 4, lines 22-43), there is only described (emphasis added):

*...[T]o overcome the effects of signal error causing factors in the cellular telephone system environment. The transmitting interfaces adds an error detection and correction format to the data signal and the receiving interface removes this format from a received data signal which is sent to a user device. The receiving device responds to the error detection and to either acknowledge receipt of acceptable data or to provide error indication to the transmitting interface by withholding the acknowledgement. The transmitting interface evaluates the errors in the received data stream and varies a data packet repeat size for subsequently transmitted data. Also, the transmitting interface retransmits previously transmitted data which was found to be erroneous at the receiving interface.*

In other words, O’Sullivan describes only a method of error detection between predetermined cellular phones. Therefore, at the above cited portion too, O’Sullivan does not disclose or teach the feature of the apparatus of claim 1, including the recited surrounding environment detection means that detects “whether or not there are the communication obstacles shielding wireless signals in the surrounding environment” or the control means that control

means that transmits received information via the transmission means when the surrounding environment detection means *detects no communication obstacles*" (i.e., a good communication state).

Thus, Gorday even when combined with O'Sullivan still fails to meet all of the recitations of independent claim 1. Thus, Applicant respectfully requests the Examiner to withdraw the rejection of independent claim 1.

Claims 2-4

Applicant respectfully requests the Examiner to withdraw the rejection of dependent claims 2-4 at least because of their dependency from claim 1.

Moreover, with respect to dependent claim 3, Applicant respectfully note that Gorday does not include any feature that could reasonable be considered as an imaging means. Instead, Gorday merely discloses a system in which potential "partners" are selected based on a link quality of their first protocol transmission (i.e., good or poor communication state) and their availability.

Claims 5 and 6

With respect to claims 5 and 6, Applicant respectfully requests the Examiner to withdraw the rejection at least for similar reasons to those discussed above with respect to claim 1. That is, as discussed above with respect to claim 1, there is no combination of Gorday and O'Sullivan that would reasonably meet the claimed mobile communication apparatus, which is mounted on a subject mobile unit and includes a reception means for receiving information transmitted *from another mobile unit*; a transmission means for hopping the received information

*to a third mobile unit; and surrounding environment detection means that detects whether or not there are communication obstacles shielding wireless signals in the surrounding environment.*

**Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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